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is a mistaken theory. If the objections to E. D. seem insuperable, the honest course would seem to be to commit ourselves to neither, but to keep our minds open for the present. The cocksureness, therefore, of the realists who hold to E. M. seems ill-advised. If they choose to exercise their will to believe in the face of such weighty arguments, they should at least be less impatient of those who espouse E. D.

It seems as if these realists had first decided that E. M. must be true, and then set to work as best they could to answer the objections to it. It is easy for them to do this, since E. M. is the natural human view—until one examines the situation carefully. But the natural view is by no means the correct view—as was shown, for example, when Copernicus upset man's natural way of thinking in another matter. E. D. requires just such a mental wrench; but it may none the less be the correct account. Hence it is not enough to start with the assumption that E. M. is true, and then, when the objections to it are offered, to declare that these aspects of the matter are a mystery, that they remain to be cleared up in the future. Until they are cleared up, E. M. can not pose as the correct view. We must indeed listen with open ears to any new defense offered in its behalf. We may even legitimately cherish the belief that it will turn out, after all, to be the correct view. But at present the suspicion seems well founded that this particular form of realism leads into a *cul-de-sac*; there is here no thoroughfare. My own belief is that the insistence on epistemological monism on the part of some of the most conspicuous leaders in the neo-realistic movement is the greatest obstacle in the way of the spread of a sound realistic philosophy.

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COMMENT ON PROFESSOR BROWN'S "MATTER AND ENERGY"

IN his paper on "Matter and Energy," recently published in this JOURNAL, Professor H. C. Brown has given an excellent example of sound metaphysical analysis in sharp contrast to what he calls "sentimental" philosophy. His conclusions are worth repeating:

"Our answer to the question raised above (p. 59) is now obvious. Atoms, electrons, and the like can not be unreal or they would not possess the value necessary to fulfil their function in a body of scientific knowledge. They are not mere symbols, nor are they independently existing elements brought together to constitute a whole of reality. They are simply phases of physical existence that have exceptional value from the fact that through centering attention on them it is possible to state some process in lawful fashion.

"Perhaps the most pernicious error in philosophic thinking, and even in the thought of many scientists, is that separation of matter and energy, which while justifiable in the sense that we can distinguish the shape of an object from its color, and insist that one is not the other, is wholly illegitimate, if we try to think as if the color and the shape are independent realities brought together in the particular object, instead of analytically derived aspects that have quite different practical values when it is a question of dealing with objects. If scientists have talked about 'energy atoms,' it is merely because the kind of contact we have with certain phenomena makes it impossible for us to find the 'term character' in the source from which changes spread and so the resultant energy factors constitute the sole datum, and it becomes possible to beguile ourselves with the belief that here we have a genuine disembodied energy.

"The scientists' world is the real world, but with a qualification. It is a selected real world according to those aspects which are significant for a certain purpose. Unlike the artist, whose aim is expression, the scientist can not introduce what is not really there into a certain context, but he can preserve in that context only what is fruitful for a certain purpose. He is ever under the pressure of the need of prediction. The map-maker would certainly be wrong if his map did not denote realities, but he would just as certainly be absurd if, because he charted his territory in terms of rivers, mountains, valleys, and plains, he should assert that there was nothing else of which the landscape is made up. There is no such a thing as an atom in just the sense that there is no such thing as a river, *i. e.*, they are not found out of integral relation to other realities."[1]

Put in general terms, these conclusions seem to be: (1) that the distinctions discovered by analysis which are relevant to the comprehension or execution of any operation are not arbitrary, but are determined by the character of the situation and operation which are analyzed; (2) that such distinctions, however, are not absolutely discrete existences out of which the continuity of existence is composed; and (3) that conclusions (1) and (2) are not contradictory.

These conclusions appear to me to be solid and satisfactory. Yet I think that I detect in Professor Brown's exposition of them an attitude of mind which is reminiscent of profitless philosophical controversies, and which tends to confuse their simplicity. In this I may be mistaken, for the comments I have to make may indicate only that I have drawn from Professor Brown's words implications which, he might claim, they do not necessarily warrant. If that is the case, my comments do not touch his ideas. They leave them untouched in their metaphysical significance.

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[1] This JOURNAL, Vol. XIV., pp. 64–65.

When he speaks of the aspects of things derived by analysis as having "quite different practical values when it is a question of dealing with objects," I stumble over the adjective "practical." Why does it appear in this context and why is it suggested elsewhere in the discussion? Precisely what distinction does it intend? The whole discussion, as I understand it, drives home the point that the values discovered by analysis are precisely what they are discovered to be, and this simple fact does not warrant the conclusion either that these values must also be discovered in a different situation, or that there are values which can be discovered independent of or out of any situation and so be regarded as absolute constituents which are somehow independently combined. Indeed, I take it that one of the chief merits of the paper is the demonstration that this latter conclusion is unintelligible when tested by any instance of an analysis actually performed. The physicist, for instance, finds atoms when and where he finds them, and he finds them rather than something else because they and not something else are the values really discovered in the situation he is analyzing. Furthermore, he does not find them as wholly isolated and independent things which can be defined irrespective of the situation in which they are discovered, or be regarded as the constitutive elements of the continuity of the physical world. But why, then, call their values "practical"? Why is any adjective necessary to describe them? And if an adjective is desirable, why not call them "discovered" or "real" or "relevant"?

Now in the atmosphere of philosophical controversy, the adjective "practical" does not connote "real" or "discovered." It implies an attitude of mind toward metaphysical conclusions which impairs their metaphysical status. It seems to me to imply that these conclusions are not final, but need revision in terms of an antecedent metaphysics of knowledge; and that this antecedent metaphysics is a kind of universal metaphysics which colors all conclusions in all departments of knowing. Its thesis seems to be that all values whatsoever are "practical," and this thesis seems to rob the adjective "practical" of all meaning. Delete the adjective from the quotation I have cited, and the question which we naturally ask is simply, "Have these values as a matter of fact been discovered?" Retain the adjective, and the implication appears to be neither that these values are discovered only when an effort is made to discover them, nor that we can discover another set of values the contrast with which will afford us greater illumination. It appears rather to be that all distinctions in the subject-matter of knowledge are relevant to the fact of knowing and not to the subject-matter itself.

I can understand how such a metaphysics of knowledge has been historically and even analytically motived, but I can not render it intelligible to myself. The distinction between thinking and subject-matter is, no doubt, a practical distinction in the sense that practical consequences flow from the exercise of thought, and also in the sense that thinking is an aid to practise. The attempt, however, to construe the distinction as generated by thinking for practical purposes is both futile and unintelligible. For all thinking, as I see it, goes on in a situation wherein the distinction between thinking and subject-matter is ready-made.[2] With this distinction ready-made, I can understand how we should seek to find in the subject-matter of thinking distinctions and values relevant to our needs and purposes, and how we could call these distinctions and values practical in the sense that they are thus relevant. But I find myself at a loss when these obvious matters are so construed that they seem to imply that these distinctions and values are what they are because they are practical. I should suppose that their practicality was a consequence of their nature, but not its cause. Now if the statement I have quoted from Professor Brown's paper means that the aspects of things derived by analysis have different consequences or efficacies in different situations, that statement appears to me to be evident and sound. If, however, it means that these aspects are what they are because they are "practical," the statement is to me unintelligible and implies an unintelligible metaphysics of knowing.

Professor Brown says also: "Resting-points in analysis are determined by the needs of human action, and what we are satisfied to call elements depend on the nature of reality as limiting and making possible our activities" (p. 63). This statement suggests a comment like that already made on the former quotation. It is evident that, if we did not act, we should never discover resting-points in analysis nor how reality limits and makes possible our activities. But why is it important or illuminating to say so? What is the implication of emphasis on a proposition which it would be trivial to dispute? Again, in the atmosphere of philosophical controversy, the emphasis seems to me to imply not questions about precisely what resting-points in analysis have really been discovered, nor precisely how the nature of reality limits and makes possible our activities, but questions about the nature of knowing which, when answered, lead us to restate the results of analysis in terms of a metaphysics of knowledge. The quotation is confusing. But I will not dwell further on that aspect of it, because I have cited it for another reason.

As I have said, the quotation is confusing. But strip it of its confusion, and then its correctness may be challenged. In other words, let "human action" imply action which is not human, and "our" activities imply activities which are not ours, then the statement made in the quotation is evidently incorrect. For while certain resting-points in analysis may be determined by the needs of human action, not all are so determined. Those with which Professor Brown deals are not. They are determined by a kind of action the "need" of which, if we may speak that way, is characteristic of countless other things besides man. The proviso must be kept in mind, however, that the quotation is stripped of confusion. The need of physical science is, naturally, a human need, but physical science has, obviously, a wider applicability than to human needs, and discovers how the nature of reality limits and makes possible other activities besides our own. The same is true of science generally, for the sciences generally, even including those that deal specifically with man, discover the nature of reality as limiting and making possible all sorts of activities of which "ours" are but one kind. Professor Brown says that the scientists' world is "a selected real world." This is profoundly true, is, indeed, to my mind, both in the form of its expression and in its implications, one of the most significant things in the paper, for it declares that a "real" world defined without reference to some selective process is unintelligible. But it is not simply because scientists or "we" select, that values can be selected and distinguished. They are selected and distinguished by other means also. For surely a plant selects and distinguishes its nourishment and a river cuts out its channel.[3] All this is so obvious that it seems unnecessary to state it. I have thought it worth while to state it, however, because the quotation made at the beginning of this paragraph seems to be confusing and incorrect. It promotes controversy rather than knowledge.

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[2] Since we do not think always, I would not imply that inquiries into the causes which excite thinking are futile. When thinking is excited, practical consequences follow upon its exercise, but these consequences do not, to my mind, indicate that practical needs are the causes of thought.

I have made these comments not with any desire to impair the beauty and cogency of Professor Brown's paper, but in the interest of sound metaphysical analysis of which the paper affords, to my mind, so striking an example. Such analyses have been seriously impeded by the tendency among so many of modern philosophers to think that an analysis of the fact of knowing makes it necessary to revise the results of analysis generally in terms of the process by which these results are attained. The earlier outcome of this habit of mind was to make thinking a purely theoretical activity which does not vitally cooperate with other activities in the business of successful and happy living, but which is an activity apart, and one which judges according to its own categories the subject-matter with which it deals. The real world became, so far as it is to be described as of any particular sort, a world which is ultimately to be described as a *"known* real world." In other words the metaphysical question about the nature of the world received the answer: "Its nature is to be an object of knowledge." The important topic of inquiry then became: "How is an object constituted as an object of knowledge?" Metaphysics was entirely absorbed in a metaphysics of knowing. Nearly all living philosophers over the age of forty were educated under the controlling influence of a metaphysics of this kind.

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[3] In this connection, I should say that the final paragraph of Professor Brown's paper, which I have not quoted here, is somewhat puzzling. Surely the "organism transparent to solids," even if fanciful, is, for purposes of exposition, not unlike a plant or a river or an atom. We could understand its map and it could understand ours, not simply because we select and it selects, but because both of us are in the same world, which is always a "selected real world."

Not all of them, however, were so educated with docility. The fact that thinking is also practical, a real instrument for successful living, was too obvious to be overlooked by them. Then, too, the general intellectual atmosphere had changed. Whereas the older generation did its speculating when the sciences of mathematics and mechanics furnished the basal ideas for nearly all philosophizing, and encouraged the habit of thinking of the world in spatial terms as one completed and self-contained object of thought, the newer generation was under the influence of biological, Darwinian, and historical ideas. These ideas were not favorable to an absolute and simultaneous grasp of things by the mind. They forbade the view that the world is essentially an object of knowledge, and encouraged the view that it is a domain of process, readjustment, and adaptation, wherein thinking is one of a number of activities all of which may be involved in the going on of process, readjustment, and adaptation. A vigorous philosophical reaction was the result. All that is distinctive, valuable, and promising in current philosophy is—I think it may justly be said—largely the outcome of this reaction.

But this reaction has been largely negative. The relative infrequency of pieces of constructive work like Professor Brown's is a noteworthy feature of the philosophical literature of the past twenty-five years. Most of the writing produced by the reaction has been in the interest of promoting what Professor Bush has happily called the "emancipation of intelligence," and in furthering habits of direct and experimental inquiry. Constructive work has been distinctive almost exclusively in other fields than metaphysics—education, ethics, and logic, for instance. There are reasons enough for this change of interest, reasons to be found in social and economic conditions; but the neglect of metaphysics is in part to be explained also by the confusion incident to the philosophical reaction. Metaphysical questions have rarely been approached with the directness which real intellectual emancipation warranted. They have been approached rather by first substituting for the proposition, "Thinking is theoretical," the proposition, "Thinking is practical," and then proceeding to view the world as the object of thought's practical activity, and to construe the results of analysis as determinations of thinking as practical, in much the same way as these results had formerly been construed as determinations of thinking as theoretical. Is there, for instance, much difference between the assertion that to be an object means to be thought of in ways determined by the need of thinking consistently, and the assertion that to be an object means to be selected in ways determined by the need of solving practical problems; or between the assertion that the concepts of science are derived from the ultimate categories of judgment, and the assertion that they are conventions adopted for reasons of practical economy; or the assertion that the truth of an idea consists of that idea's congruence with the rest of ideas, and the assertion that it consists of the practical consequences of the idea? The latter assertions, although they indicate a changed and stimulating point of view, do not, to my mind, indicate that the older intellectual habit in metaphysics has been really abandoned, the habit, namely, of restating the results of analysis in terms of the process by which these results are reached. The persistence of this habit is, I believe, the principal cause of the confusion which has characterized so much of recent philosophical discussion.

That there is no need to restate the results of analysis in this fashion, and that it is not really intelligible to do so, Professor Brown's paper, to my mind, abundantly demonstrates. These results are not changed by a consideration of the fact of knowing. They are changed only by further analysis of the subject-matter to which they are relevant. In short, if we really regard thinking as a genuine instrument of discovery and adaptation, we have abandoned that futile type of metaphysics which makes a theory of knowledge fundamental to all other theory, whether thinking is regarded as essentially theoretical or essentially practical. Then intelligence has been really emancipated. Then we are in a position to address ourselves to metaphysical analysis with that directness, immediacy, and confidence which, when seen in others, is wont to stir the envy of philosophers.

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